ABSTRACT OF THE DISCLOSURE

An organic semiconductor device includes a organic semiconductor layer with carrier mobility formed between a pair of opposing electrodes. The device also includes a buffer layer that is inserted between at least one of the pair of electrodes and the organic semiconductor layer in contact therewith. The buffer layer has a value of a work function or an ionization potential between a value of a work function of the electrode in contact and a value of an ionization potential of the organic semiconductor layer.